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(54) TERMITE PROOF ASPHALT SHEET
(75) KOICHI NISHIMOTO
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The present invention relates to a termite-proof asphalt sheet.

It is an object of the present invention to provide a new termite-proof building material which can exert a very strong termite-killing power for many years and prevent the wooden construction against the termites, just by pre-laying it under a floor or upon a foundation at the time of construction.

It is another object of the present invention to provide a termite-proof building material which is mixed with a thermoplastic elastomer so as to give a gum-like elasticity to the sheet.

It is still another object of the present invention to provide a termite-proof asphalt sheet of which the composition is improved so as to eliminate manufacturing difficulties while maintaining its excellent property as a termite-proof building material. The lower limit of the temperature influence exerted upon the sheet is determined by heat at the time of manufacturing. Since

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the organic phosphorous compound is added into the asphalt melted at a high temperature, the organic phosphorous compound is highly volatilized. This causes an increase in the manufacturing cost and also an environmental pollution by the peculiar bad smell caused at the volatilization. The present invention is provided to solve these problems.

Claim

1) A termite-proof asphalt sheet which is a sheet-form asphalt molding product and which contains in uniform dispersion at a predetermined density an immediate effective insecticide of which an active ingredient is at least one kind of organic phosphorous compound selected from fenitrothion, phoxime, chlorpyrifos, acephate and prothiophos; and an effect sustaining stabilizer of which an active ingredient is an organic acid metal complex such as zinc octylic acid or zinc versatic acid.

COMMONWEALTH OF AUSTRALIA

Patents Act 1952

COMPLETE SPECIFICATION
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Complete Specification for the invention entitled:

TERMITE-PROOF ASPHALT SHEET

The following statement is a full description of this invention
including the best method of performing it known to me :-

Conventional steps have been taken so as to prevent the termites in complying with such demand. One of them is a termite-preventing metal plate to be inserted between the sill and the foundation. The other step is termite-preventing treatment to be provided with insecticide such as dieldrin, pentachlorophenol, etc., on wood to be used for the wooden construction and/or in the soil at the construction site.

However, the former step of using the termite-preventing metal plate is easily conquered by Termite Bridge which the termites construct by instinct while the latter step of the termite-preventing treatment finds it very difficult to protect the wooden construction against the termites for 20 to 30 years in view of the effective duration of the insecticide provided in the soil. Therefore more perfect step to realize the protection of long duration must be taken.

The present inventor felt very unsatisfied with these conventional techniques, and for the purpose of developing a much more perfect termite-preventing technique, he firstly paid his attention to the quality of the building material constituting the wooden construction and then he started his study believing that it would be possible to eliminate the termites from the construction for many years if the building material is used which has the property of killing/preventing the termites for a long period.

Thus, his first attempt was to blend an insecticide into a vinyl chloride resin and to mold therefrom into a termite-proof sheet. Upon starting an actual experiment, however, he encountered with a problem as to what kind of insecticide should be mixed so as to obtain the building material which keeps its termite-killing power strong for a long period of 20 to 30 years but which is not toxic to human body. If the insecticide is chosen regarding only the termite-killing power as important and disregarding the toxicity to the human body, then the building material comprising thereof will be harmful to the construction workers' health since they

handle these building materials.

Therefore the present inventor chose chlordane of which the toxicity to human body is relatively low but which has a very strong and long-continuing power of killing the termites and started to mix it into a synthetic resin material (actually a vinyl chloride resin) for molding a product. However this experiment ended in a failure. It proved that chlordane cannot be used because it is unstable to heat and, for the most part, volatilized at the molding temperature of vinyl chloride resin, and in addition thereto chlordane oozes out of the molding product.

The present inventor further continued his trial-and-error experiment so as to overcome the aforementioned problems and he finally found a fact that if the mixture of the organic phosphorous compound having strong killing power and taking an immediate effect and the organic acid metal complex, such as metal octylic acid or metal versatic acid, having no killing power but enabling the insecticide to keep its effect extremely long are blended into the synthetic resin for molding, then this molding product has a very powerful and long-lasting effect of killing the termites. But there are many kinds of the organic phosphorous compounds, and some of them are toxic to human body while some are ineffective against the termites. Consequently he was forced to make a specific investigation of the organic phosphorous compounds one by one and as a result he came to the conclusion that fenitrothion, phoxime and acephate are appropriate as insecticide to be mixed and that the effective duration thereof increases when used with zinc octylic acid or zinc versatic acid. Thus he succeeded in molding a sheet-form product from the mixture of these chemical substances. The vinyl chloride sheet thus obtained has no problem that the insecticide oozes out and shows a strong termite-killing power as is confirmed by the experiment.

However another problem has been found in the vinyl chloride sheet. The vinyl chloride resin becomes deteriorated and easy to break if it is exposed for a long period to an environment with

extremes of temperature or with high temperature and high humidity. Therefore there arose a problem that the sheet laid under a floor easily broke during the construction.

5 In view of the above, the present inventor furthered his study seeking a sheet molding material which is suitable to be mixed with the insecticide and the stabilizer and as a result thereof he made the present invention.

10 Summary of the Invention

The present invention relates to a termite-proof asphalt sheet.

15 It is an object of the present invention to provide a new termite-proof building material which can exert a very strong termite-killing power for many years and prevent the wooden construction against the termites, just by pre-laying it under a floor or upon a foundation at the time of construction.

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It is another object of the present invention to provide a termite-proof building material which is mixed with a thermoplastic elastomer so as to give a gum-like elasticity to the asphalt.

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It is still another object of the present invention to provide a termite-proof asphalt sheet of which the composition is improved so as to eliminate manufacturing difficulties while maintaining its excellent property as a termite-proof building material and to lower almost to zero the bad influence exerted upon the added chemical substances by heat at the time of manufacturing. Since the organic phosphorous compound is added into the asphalt melted at a high temperature, the organic phosphorous compound is highly volatilized. This causes an increase in the manufacturing cost and also an environmental pollution by the peculiar bad smell emitted at the volatilization. The present invention is provided so as to solve these problems.

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